

REMARKS

Claims 1-14 are all the claims pending in the application. Claims 8-13 have been withdrawn from consideration by the Examiner. Claim 14 has been added to further define the invention. Reconsideration and allowance of all the claims are respectfully requested in view of the following.

Claim Rejections - 35 U.S.C. § 103

- The Examiner rejected claims 1 and 3-6 under §103(a) as being unpatentable over JP 3-226251 to Kusase (hereinafter Kusase) in view of US Patent 4,402,129 to Kreuzer et al. (hereinafter Kreuzer) and US Patent 4,102,040 to Rich (hereinafter Rich). Applicants respectfully traverse this rejection because the references fail to establish *prima facie* obviousness in that the Examiner's proposed combination impermissibly would change the principle of operation in Kusase, and the references fail to teach or suggest all the elements as set forth in Applicants' claims.

First, the Examiner's proposed combination impermissibly would change the principle of operation in Kusase. And if the proposed combination of the prior art changes the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious.¹

As stated in the English abstract, Kusase winds the stator coil 16 around the respective tees in a manner so that only the y phase alternates between the inner and outer portions of a slot; the x and z phases remain in the outer and inner portions, respectively, of the slots. According to the principle of operation in Kusase, i.e., the manner in which the coil is wound, he is able to reduce the number of tees for a given magnetic pole number, to reduce the noise due to magnetic sound, and to reduce the overlap of the coils of respective phases.

¹ *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). See also MPEP § 2143.01.

The Examiner asserts that one of ordinary skill in the art would have wound the phases of Kusase's stator so as to alternate in position as taught by Kreuzer so as to achieve a higher space utilization factor.² Kreuzer teaches that the good space utilization factor results from overlapping the partial windings in the coil phases.³ Thus, Kreuzer operates on the principle of winding the stator coil so as to increase the overlap in the coil phases so as to make the overall coil smaller. But this principle of operation is exactly the opposite of that in Kusase, i.e., winding the stator coil so as to reduce the amount of phase overlap.

Accordingly, the Examiner's attempted combination of Kreuzer and Kusase impermissibly would change Kusase's principle of winding the stator coil so as to reduce the amount of phase overlap to Kreuzer's principle of winding the stator coil so as to increase the amount of phase overlap. Therefore, the teachings of Kreuzer and Kusase do not establish *prima facie* obviousness.

Second, for the sake of argument, even assuming that one of ordinary skill in the art would have combined Kreuzer and Kusase as suggested by the Examiner, any such combination would still not teach or suggest all the elements as set forth and arranged in Applicants' claims.

The Examiner asserts that Kreuzer teaches a polyphase winding comprising a number of winding portions, wherein each comprises a long strand of wire wound so as to alternately occupy an inner layer and an outer layer in a slot depth. The Examiner's interpretation of Kreuzer is mistaken.

Kreuzer, in Figs. 1 and 2, does not disclose that long strands of wire are wound so as to alternately occupy an inner layer and an outer layer in a slot depth direction within the slots at intervals of a predetermined number of slots to form one phase of a stator winding. Instead, the Kreuzer's strand of wire is repeatedly wound so as to occupy an inner layer and an outer layer in

² Office Action at paragraph bridging pages 2 and 3, and at page 3, 2nd full paragraph.

³ Kreuzer at col. 2, lines 34-38, 52-53, and Fig. 2.

a slot depth direction within the slots at intervals of a predetermined number of slots to form one phase of a stator winding.

The Examiner cites Rich as teaching a method of forming an alternator stator core stack made from stacked individual laminations.⁴ But Rich does not teach or suggest anything to cure the above-noted deficiencies in the teachings of Kusase and Kreuzer. Thus, these references fail to render obvious Applicants' claims 1 and 3-6.

- The Examiner rejected claims 1-6 under §103(a) as being unpatentable over Kusase in view of Kreuzer and JP 1-252141 to Shinichiro (hereinafter Shinichiro). Applicants respectfully traverse this rejection because the references fail to establish *prima facie* obviousness.

Again, as noted above, the Examiner's attempted combination of Kusase with Kreuzer is deficient because it impermissibly would change Kusase's principle of operation, and does not teach or suggest all the elements as set forth in Applicants' claims. The Examiner cites Shinichiro as teaching a stator core formed from sheets and plural arc-shaped divided core portions.⁵ But Shinichiro does not teach or suggest anything to cure the above-noted deficiencies in the teachings of Kusase and Kreuzer. Thus, these references fail to render obvious Applicants' claims 1-6.

- The Examiner rejected claim 7 under §103(a) as being unpatentable over Kusase in combination with either Kreuzer and Rich, or Kreuzer and Shinichiro, and further in view of US Patent 4,692,646 to Gotou (hereinafter Gotou). Applicants respectfully traverse this rejection because the references fail to establish *prima facie* obviousness.

Again, as noted above, the Examiner's attempted combination of Kusase and Kreuzer with either Rich or Shinichiro is deficient because it impermissibly would change Kusase's

⁴ Office Action at page 3, 1st full paragraph.

⁵ Office Action at page 4, 2nd full paragraph.

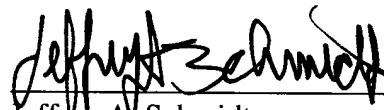
principle of operation, and does not teach or suggest all the elements as set forth in Applicants' claims. The Examiner further cites Gotou as teaching a permanent magnet machine including a stator having short and long teeth of different circumferential width.⁶ But Gotou does not teach or suggest anything to cure the above-noted deficiencies in the teachings of Kusase and Kreuzer. Thus, these references fail to render obvious Applicants' claim 7.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Jeffrey A. Schmidt
Registration No. 41,574

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE



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⁶ Office Action at page 5, 5th full paragraph.

APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claim 14 has been added as a new claim.